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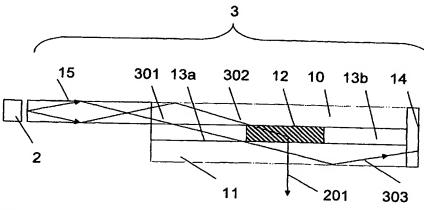
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(54) Title: SWITCHABLE VIEWFINDER DISPLAY



(57) Abstract: A compact high quality and lightweight symbol generator (3) for projecting symbolic information into the field of view of a viewfinder is provided. The symbol generator (3) comprises at least one Electrically Switchable Bragg Gratings (ESBG) (13a, 12, 13b) device sandwiched between a pair of transparent plates (10, 11) which together function as a total internal reflection lightguide, switching electrodes and means for coupling illumination into the light guide. Each ESBG device contains information encoded in a multiplicity of separately switchable grating regions (12). A plurality of independently switchable transparent electrodes elements, substantially overlay the separately switchable grating regions (12).





INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/14124

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A. CLASSIFICATION OF SUBJECT MATTER					
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B. FIELDS SEARCHED					
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C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category *	Citation of document, with indication, where	appropriate of the relevant passages	Delevent to elein M.		
A,P	US 6,614,948 B2 (JACOBOWITZ ET AL.) 02 SE	DTEMPED 2002	Relevant to claim No.		
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INTERNATIONAL SEARCH REPORT	International application No. PCT/US04/14124
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Continuation of B. FIELDS SEARCHED Item 3: (OPTICAL ADJ VIEWFINDER) AND GENERATOR\$1 AND (ELECTRICALLY AGRATING\$1) AND (TRANSPARENT ADJ PLATE\$1) AND (SWITCHABLE ADJ	ADJ SWITCHABLE) AND (BRAGG ADJ GRATING)
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